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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,995	11/14/2001	Dick Ang	P01.0393	1249

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EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/993,995

Applicant(s)

ANG ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17-19, 22-29, 31-33 and 35 is/are rejected.
- 7) ☒ Claim(s) 14-16, 20, 21, 30 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: See Remarks

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 6 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The scope of protection provided by the claim is not adequately enabled by

the disclosure. The disclosure has not provided a definition for the "weapons level radiation" as claimed. There has been not discussion of what constitutes "weapons level radiation". What level of radiation is considered "weapons level radiation"? Is weapons level radiation along the lines of a nuclear blast or sunshine on a sunny day? There is nothing within the disclosure to define the scope of what is considered weapons level radiation.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4, 6, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,205,265 to Rozelle et al.

Referring to claim 1, Rozelle et al. discloses all the limitations of the claimed invention. Rozelle et al. discloses an apparatus comprising a fiber optic light source (10) where the attenuation due to radiation minimized. See Fig. 1-4 along with their respective portion of the specification.

Referring to claim 4, Rozelle et al. discloses all the limitations of the claimed invention. Rozelle et al. discloses the fiber optical light source (10) comprises a pump laser(14) and a length of doped fiber optic material (26) through which is configured to receive light from the light pump, and re-emit the light with a predetermined spectrum and wavelength.

Referring to claims 6 and 11, Rozelle et al. discloses all the limitations of the claimed method. Rozelle et al. discloses an method of generating a light in a wavelength which is useful in a interferometric fiber optic gyroscope including the steps of: generating light in a predetermined wavelength, re-emitting the light through a length of erbium doped fiber at a wavelength in which it is substantially unaffected by weapons level radiation; and directing the re-emitted light to an interferometric fiber optic gyroscope. See Fig. 1-4 along with their respective portion of the specification.

Referring to claim 10, Rozelle et al. discloses all the limitations of the claimed method. Rozelle et al. discloses that the re-emitted light passes through several filters (WDMs) before being directed to the fiber optic gyroscope.

7. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,144,788 to Ang et al.

Referring to claim 13, Ang et al. appears to disclose all the limitations of the claimed invention. Ang et al. appears to disclose a light source configured to produce a light output shaped such that more than 50% of the output power is within a range of

1515 nm to 1545 nm and substantially centered within the 1515 nm to 1545 nm range.

See Fig. 4 along with its respective portion of the specification.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2, 3, 5, 7-9, 12, 17-19, 22-29, 31-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,205,265 to Rozelle et al. in view of U.S. Patent No. U.S. Patent No. 6,429,965 to Falquier et al.

Referring to claims 2, 3, 5, 7-9 and 12, Rozelle et al. discloses all the limitations of the claimed invention, except Rozelle et al. does not appear to disclose that fiber optic light source produces a light output with a mean wavelength of about 1532 nm and

that the Erbium Doped Fiber has a length of about 5 to 15 meters. It is known within the art that the length of the erbium doped fiber affects the mean output wavelength of these types of optical sources. Falquier et al. discloses a similar light source that utilizes a 15 m long erbium doped optical fiber to output a signal at about 1530 nm, for the purpose of providing a wavelength stable optical light source for a fiber optic gyroscope. Since Rozelle et al. and Falquier et al. are both from the same field of endeavor, the purpose disclosed by Falquier et al. would be recognized within the pertinent art of Rozelle et al. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a 15 m long erbium doped fiber capable of producing an output signal at about 1530 nm as disclosed by Falquier et al. for the purpose of producing a wavelength stable light source for the fiber optic gyroscope of Rozelle et al, since it is known within the art that changes in wavelengths have a negative impact on the effectiveness of fiber optic gyroscopes. See Fig. 1 along with its respective portion of the specification, within the Falquier et al. reference.

Referring to claims 17-19, 22-29, 31-33 and 35, Rozelle et al. discloses all the limitations of the claimed invention, except Rozelle et al. does not appear to disclose that fiber optic light source produces a mean wavelength with a drift of less than 15 ppm. Falquier et al. discloses a similar light source that produces a mean wavelength that is stable to better than 3 ppm, for the purpose of providing a wavelength stable optical light source for a fiber optic gyroscope. Since Rozelle et al. and Falquier et al. are both from the same field of endeavor, the purpose disclosed by Falquier et al. would be recognized within the pertinent art of Rozelle et al. It would have been obvious to

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one having ordinary skill in the art at the time the invention was made to utilize an optical source capable of producing a mean wavelength with a minimal amount of drift, since it is known within the art that changes in wavelengths have a negative impact on the effectiveness of fiber optic gyroscopes. See Fig. 1 along with its respective portion of the specification, within the Falquier et al. reference.

***Allowable Subject Matter***

11. Claims 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 20, 21, 30 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 14-16, the prior art does not appear to disclose the combination of all the limitations of the claimed invention. The prior art does not appear to disclose that a light source configured such that 85% of the power is within 1515 nm to 1545nm.

Referring to claims 20 and 21, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the light source is configured

such that at least 99% of power is substantially centered about a mean wavelength of 1532 nm.

Referring to claims 30 and 34, the prior art does not disclose the combination of all the limitations of the claimed invention. The prior art does not disclose the use of a band reject filter gratin for filtering the re-emitted light transmitted by the isolator.

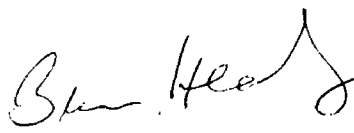
### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW  
June 18, 2003



Ben Healy  
Examiner  
Patent Office

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